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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,401	03/19/2001	Shuang-Hui Hao	Q63623	2380

7590 04/02/2004

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2100 Pennsylvania Avenue N W
Washington, DC 20037-3202

EXAMINER

KASENGE, CHARLES R

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 04/02/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/787,401

Applicant(s)

HAO ET AL.

Examiner

Charles R Kasenge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed January 23, 2004, have been fully considered but they are not persuasive. Although the Applicant disagrees, the Office asserts that Koyama does disclose a real controller section that provides a real torque signal based on a real control parameter and further that the real control parameter be provided by an evaluation section that is part of the simulation section (col. 4 and 5, lines 47-68 and 1-5). The Office interprets Koyama's control means as the real controller section that provides a real, or first torque signal (col. 5, lines 3-5). Koyama's feed-forward signal calculating circuit is interpreted as the evaluation section that is part of the simulation section (col. 4, lines 58-61), which provides a real control parameter. The real control parameter is interpreted to be Koyama's rotational angle command signal.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16, 18, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Koyama et al. U.S. Patent 5,428,285. Referring to claim 16, Koyama discloses in a machine system, an apparatus for controlling an electric motor (col. 3, lines 3-7), comprising: a simulator section consisting of a position instruction generator for providing a real position instruction (col. 3, lines 44-48), a numerical model that simulates said machine system and provides

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a simulation quantity of state on the basis of torque signal (col. 37, lines 48-52), a simulation controller that provides said numerical model with a simulation torque signal on the basis of said quantity of state (col. 4, lines 3-11), a simulation control parameter and a first simulation position instruction signal (col. 30, lines 9-18), and an evaluation section that provides a real control parameter, a simulation control parameter, and a first simulation position signal on the basis of said real position instruction and said simulation quantity of state (col. 3, lines 57-66); and a real controller section that has the same structure as that of said simulation controller, and provides a torque signal to an electric motor, which is a source of drive, on the basis of said real position instruction, said real control parameter and a quantity of state observable from a real system (col. 4 and 5, lines 47-68 and 1-5).

Referring to claim 18, Koyama discloses the apparatus for controlling an electric motor as set forth in Claim 16, wherein said apparatus is provided with a means for supplying control parameters, which are obtained by the evaluation unit of said simulation section to the real control section after said simulation section is driven prior to a real operation and a simulation evaluation function for evaluating the behaviors of said numerical model satisfies the initial conditions established in advance (col. 6, lines 1-11).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama et al. U.S. Patent 5,428,285 as applied to claim 16 above, and further in view of Kim U.S. Patent 5,971,579. Koyama does not expressly disclose the use of a genetic algorithm for a simulation controller. However, Kim discloses using a genetic algorithm for a controller (col. 2, lines 59-64 and Fig. 2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a genetic algorithm for Koyama's simulation controller. One of ordinary skill in the art would have been motivated to do this since Kim discloses using genetic algorithms for controlling a motor in order to satisfy specify user's desired specification, or increased controlling accuracy (col. 2, lines 59-64).

6. Claims 19-27, 29, 30, and 31, are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama as applied to claims 1-3 above, and further in view of Sato et al. U.S. Patent 5,511,930. Koyama discloses an apparatus for controlling an electric motor that has a simulation portion and a real portion. Koyama also discloses using a PI controller (col. 14, lines 44-56). However, Koyama does not expressly disclose using a PID controller or using a plurality of compensators for the electric motor. Sato discloses using a PI and/or PID controller (col. 11, lines 41-52) for controlling an electric motor (col. 4, lines 62-64).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a PID controller and a plurality of compensators for Koyama's apparatus for controlling an electric motor. One of ordinary skill in the art would have been motivated to do this since Sato discloses a PI and PID controller can be interchangeably utilized (col. 11, lines 41-52).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

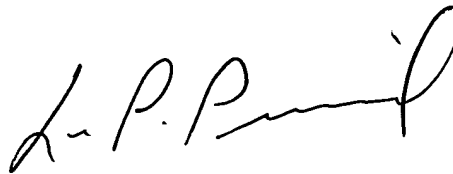
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles R Kasenge whose telephone number is 703 305-8592. The examiner can normally be reached on Monday through Friday, 8:30 - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 703 308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 31, 2004
CK

A handwritten signature in black ink, appearing to read "L. P. Picard", with a large, stylized loop at the end.

**LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**